Claims

1. A non-magnetic, ceramic one-component toner, which can be transferred by means of electro-photographic printing to a glass, glass-ceramic or ceramic substrate or similar rigid or flexible substrate and can be fired in a subsequent temperature process and which contains a substantially inorganic proportion of a foreign substance besides a plastic matrix,

characterized in that

the proportion of foreign substances exclusively contains non-magnetic particles and is > 30 to 80 weight-%, in particular 50 to 60 weight-%, wherein the specific charge of the toner particles lies in a range of > 25 μC/g.

2. The toner in accordance with claim 1,

characterized in that

the proportion of foreign materials comprises glass flow particles and/or pigment particles and/or charge control particles.

3. The toner in accordance with claim 1 or 2,

characterized in that

the particle size of the toner particles, in particular the glass flow particles and/or pigment particles used, lies in the range of 1 to 12 μm (D50 vol), in particular in the range of 3 to 8 μm.

4. The toner in accordance with one of claims 1 to 3,

characterized in that

the proportion of wax lies in the range of 1 to 10 weight-%, in particular in the range of 3 to 7 weight-%.

5. The toner in accordance with one of claims 1 to 4, characterized in that

the toner contains glass flow particles from a specific glass frit in the range of > 30 to 80 weight-%, in particular 45 to 60 weight-%, and/or inorganic pigments in the range of 0 to < 20 weight-%, in particular 5 to < 20 weight-%, and/or a plastic matrix in the range of 20 to 60 weight-%, in particular > 30 to 50 weight-%.

6. The toner in accordance with one of claims 1 to 5, characterized in that

the contains charge control materials as additives in the plastic matrix, whose proportion lies in the range of 1 to 5 weight-%.

7. The toner in accordance with one of claims 1 to 6, characterized in that

the toner has a thermoplastic matrix, which homogeneously melts on the substrate in the temperature range of 100°C to 400°C, in particular 110°C to 150°C.

8. The toner in accordance with one of claims 1 to 7, characterized in that

in the temperature range of 300°C up to 500°C, the plastic matrix evaporates with almost no residue and/or burns off.

9. The toner in accordance with one of claims 1 to 8,

characterized in that

the plastic matrix contains toner resins on a polyester basis and/or acrylate basis, in particular styrene acrylate, polymethylmetacrylate, or the cycloolefin copolymer Topas(R) of the Ticona company.

10. The toner in accordance with one of claims 1 to 9, characterized in that

the plastic matrix contains polymers, for example polyvinyl alcohol, polyoxymethylene, styrene copolymers, polyvinylidene fluoride, polyvinyl butyral, polyesters (unsaturated and/or saturated, or mixtures thereof), polycarbonate, polyvinyl pyrrolidone, vinyl imidazole copolymers, and/or polyether.

11. The toner in accordance with one of claims 1 to 10,

characterized in that

it contains oxidation means as additives.

12. The toner in accordance with one of claims 1 to 11,

characterized in that

it is additionally coated with auxiliary materials to aid flow, such as aerosils.

13. The toner in accordance with claim 10 or 12, characterized in that

the additives and the auxiliary materials to aid flow are added in amounts of respectively 0 and 1.0 weight-%, in particular 0.2 to 0.5 weight-%.

14. The toner in accordance with one of claims 1 to 13,

characterized in that

the toner particles have an irregular shape and are only partially enclosed by the plastic matrix.

15. The toner in accordance with one of claims 1 to 14,

characterized in that

for breaking down the polymers, the toner has peroxides and/or azo compounds with decomposition temperatures of > 150°C.

16. The toner in accordance with one of claims 1 to 15,

characterized in that

the toner can be applied to a transfer medium.

17. The toner in accordance with claim 16,

characterized in that

the transfer medium is a support coated with gum arabic, for example a paper or a foil.

18. The toner in accordance with one of claims 1 to 17,

characterized in that

the foreign material used is a gemstone such as Al_2O_3 or ZrO_2 or the like, or gold, silver, copper or similar non-magnetic material.